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BOTANICAL GAZETTE

JULY, 1895.

Undescribed plants from Guatemala and other Central American Republics. XV.

JOHN DONNELL SMITH.

Duguetia leiophylla Donnell Smith. —Folia oblongo-lanceolata acuminata basi obtusata vel acutiuscula glaberrima venulosa aureo-punctula, margine revoluta. Pedunculi uniflori, bractea versus basin sita parvula. Sepala minuta triangulari-ovata; petala ovalia subaequalia subtus lepidota, margine pubescente, ceterum glabra; torus disciformis crassus cum genitalibus glaber; styli concreti basi articulati ovaria aequantes eisque paululum crassiores.

A low, spreading tree (Thieme). Leaves slightly coriaceous shining, $3-4\frac{1}{4} \times 1\frac{1}{2}-1\frac{3}{4}$ in, petioles 2' long. Peduncles terminal or becoming leaf-opposed, articulated above base, glandular-lepidote, 6-8' long, bract ovate (1') with pubescent margin. Sepals 3, free, thick, glandular-lepidote, margin pubescent, $1\frac{1}{2}$ ' long. Petals 6, 2-seriate, fleshy, imbricate, erecto-patent, explanate, $14-17 \times 10-12$, each end rounded, shortly unguiculate. Torus somewhat obversely hemispherical, 1' high, ecostate; gynophore plane, 2' in diam., areolated with facets of carpels. Stamens all fertile, cuneate, $1 \times \frac{1}{2}$. Ovaries 50-70, columnar ($\frac{2}{3}$ '), angular; ovule solitary, basal. Fruit not seen.

San Pedro Sula, Depart. S. Bárbara, Honduras, alt. 800ⁿ, Apr. 1890, C. Thieme, no. 5, 129.

Serjania punctata Radlk. —Scandens, fruticosa, glabra; rami subaequaliter 6-costati, costis obtusis, 6-sulcati, cortice e viridi pallescente; corpus lignosum compositum e centrali majore et periphericis 2-3 parvis, teretiusculis, centrali impositis; folia biternata; foliola lateralia ovata, obtusiuscula vel subacuta, sessilia, terminalia elliptica, breviter acuminata et mucronulata, basi attenuata, omnia remotiuscule leviter serrata, membranacea, reti venarum tenero nec prominente in-

structa, glabra, nec nisi glandulis microscopicis adspersa, punctis pellucidis conspicuis iisque prominentibus insignita, epidermide mucigera; petiolus communis nudus, partialium intermedius (in foliis inferioribus certe) superne marginatus; thyrsi solitarii, dense cincinniferi; cincinni stipitati, pedicellis prope basin articulatis; flores minores; sepala exteriora minutim puberula interioribus tomentellis dimidio breviora; fructus —.

Rami thyrsigeri diametro 3^{mm}. Folia circ. 10^{cm} longa, 8^{cm} lata; foliola terminalia 4.5^{cm} longa, 2.5^{cm} lata, lateralia superiora 4^{cm} longa, 2^{cm} lata, inferiora dimidio minora; petiolus communis circ. 4^{cm} longus, partialium intermedius 2^{cm}, laterales 8^{mm} longi; stipulæ parvæ, ovato-triangulares. Thyrsi folia superantes, rhachi quam pedunculus communis paullo longiore; cincinni circ. 8-flori, stipite 3-4^{mm} longo suffulti, pedicelli 2^{mm} longi. Flores masculi: sepala exteriora 1.5^{mm}, interiora vix 3^{mm} longa. Petala angustiora, ex oblongo attenuata, 3.5^{mm} longa, 1.5^{mm} lata, intus laxè glanduligera; squamæ ciliolatæ, superiores crista bifida (laciniis acutis apice patulis) appendiceque brevi barbata, inferiores crista inaequaliter bicruri instructæ. Tori glandulæ superiores ovatæ, obtusæ, glabræ, laterales minores orbiculares. Stamina basi pilosiuscula. Germinis rudimentum ad angulos pilosiusculum.

Affinis *S. mucronulatæ* (in sect. XI, PHYSOCOCCUS), a qua differt costis ramorum obtusissimis, petiolo intermedio superne marginato, foliolorum punctis pellucidis majoribus.

✓ Cuajiniquilapa, Depart. S. Rosa, Guat., alt. 2,500^{ft}, Oct. 1894, Heyde & Lux, no. 6,091.

Paullinia hymenobracteata Radlk.—Scandens, fruticosa, hirsuta; rami trigoni vel subteretes, striato-sulcati, pilis patentibus e sufferugineo pallescentibus vestiti; corpus lignosum compositum e centrali majore et periphericis 3 minoribus partim quodammodo complanatis in centrale plus minus immer-
sis; folia 5-foliolato-pinnata; foliola terminalia rhombea, in acumen acutum angustata, supra medium grossiuscule inaequaliter dentata, lateralia superiora ovalia, basi acuta, inferiora ovata, basi inaequilatera rotundata, apice acuta vel obtusata, a basi remotiuscule dentata, breviter petiolulata, membranacea, supra pilis setulosis adpressis laxè adspersa vel praeter nervos glabra, subtus subhirsuta necnon glandulis microscopicis curvatis vel geniculatis obsita, minutim pellucide punctata retique utriculorum lacticiferorum subtus instructa,

epidermide parum mucigera; rhachis nuda; stipulæ insignes, semicordato-deltoideæ, subacuminatæ, basi subbilobæ, inter lobos oblique affixæ, lobo interiore (i. e. folii medianam spectante) majore, scariosæ, extus hirsutæ; thyrsi axillares, inferiores folia subduplo superantes breviores paniculatim congesti, subhirsuti; bracteæ bracteolæque conspicuæ, oblongæ, tenuiter scarioso-membranaceæ, concavæ, apice margineque necnon dorso secus medianam pilis longioribus obsitæ; flores mediocres pedicellique supra articulationes tomentelli.

Rami diametro 2-4^{mm}. Folia superiora 16-18^{cm} longa, 10-12^{cm} lata, inferiora duplo majora; foliola lateralia 5-6^{cm} longa, 2.5-3^{cm} lata, terminalia subduplo majora, sicca subfusca; petiolus communis circ. 4^{cm}, rhachis 3^{cm} longa, subhirsuta, petioluli 2-3^{mm} longi; stipulæ 7^{mm} longæ, 5-6 latae. Cincinni stipitati, stipite 5-6^{mm} longo hirsuto; pedicelli 3^{mm} longi, infra medium articulati, infra articulationes hirsuti; bracteæ 5^{mm} longæ, 2^{mm} latae, bracteolæ (prophylla) vix tertia parte minores. Alabastra obovata, 3-4^{mm} longa. Sepala interiora 4-5^{mm} longa, exteriora breviora. Petala obovata, intus glandulis microscopicis adspersa; squamæ margine villosiusculæ, superiores crista obcordata appendiceque deflexa squamam dimidiam longitudine superante villosa instructæ. Tori glandulæ ovatæ, basi villosiusculæ. Stamina pilosa. Geminis rudimentum puberulum.

Affinis videtur *Paullineæ monogynæ* Radlk. (in sect. XII, CALOPTILON). Ad eandem *P. hymenobracteata* pertinet Tate no. 59!, ann. 1867 in Nicaragua lecta, in Hb. Kew. servata (*Paullinia* sp. Hemsley in Salvin et Godm. Biol. Centr.-Am., Bot. 1: 211. 1879-81. [no. 17.]).

Malpais, Depart. S. Rosa, Guat., alt. 4,000^{ft}, Sept. 1894, Heyde & Lux, no. 6,093.

Dalea cinerea Moric. ex sched. Benth. in herb. Kew.; erecta, sublignosa, caule striato, undique fulvo-tomentoso, ramis erectis, foliis imparipinnatis, pubescentibus, foliolis 4-5 jugis, subtus glandulosis, floribus in spicas densas, terminales, congesti, siccitate nigricantibus.

Suffrutex videtur 1.5-2^{ped}. Caules erecti, ramis ascendentibus, dense fulvo-tomentosis. Stipulæ lineari-setaceæ, rigidiusculæ, 1-1.5^{lin} longæ, folia vix pollicem longa, usque ad basim petioli foliolata, petiolo gracili, fulvo-pubescente. Foliola 3-4 juga, sessilia, ovata, obtusa, utrinque pubescentia, ciliata, subtus glandulis nigris irregulariter obsita, 2^{lin} longa.

Spicæ ad apicem ramorum terminales, densifloræ, 1.5–2^{poll} longæ, siccitate nigricantes. Bracteæ late cordato-ovatæ, carinatæ, longe acuminatæ, florem amplectentes, 1.5^{lin} longæ, persistentes. Calyx pubescens, coriaceus, 5-dentatus, lacinia carinali longiore, tubo 10-nervio, glanduloso, 1.5^{lin} longo. Vexillum cordato-orbiculare, longe stipitatum, carina brevius, 1.5^{lin} longum. Alæ rectæ, stipitatæ, vexillum vix superantes, lateraliter plicatæ. Carina recta, obtusa, stipitata, glandulis raris notata, vexillum superans 2^{lin} longa. Stamina monadelphæ, vagina supra fissa. Antheræ parvæ, nutantes, ad apicem glandulosæ. Ovarium sessile, ovatum, dense tomentosum. Legumen calyce coriaceo inclusum membranaceum, pubescens.

Haec planta ad specimen in herb. Kew. servatum et a cl. Bentham sub nomine *D. cinerea* Moric. labellatum pertinet. Sed nunquam in libris, herbariis, etc. Moricand, hoc nomen occurrit. Verisimiliter hoc nomen errore cl. Bentham hic adest et planta nondum descripta fuit. Nobis species bene delimitata videtur sed genus *Dalea* revisionem aegre caret. (M. Micheli.)

Santiago, Depart. Zacatepéquez, Guat., alt. 6,500^{ft}, 1891, Rosalió Gómez, no. 999.—Embaulada, Depart. Zacatepéquez, Guat., alt. 5,500^{ft}, Dec. 1889, Heyde & Lux, no. 4,465.

GLIRICIDIA MACULATA HBK., var. **multijuga** Micheli. Differt foliolis 7–8- nec 3–5-jugis, minoribus et magis pubescentibus.

✓ S. Rosa, Depart. S. Rosa, Guat., alt. 3,000^{ft}, Apr. 1892, Heyde & Lux, no. 3,296.

ÆSCHYNOMENE AMERICANA L., var. **longifolia** Micheli. Quam planta typica in omnibus partibus major, magis robusta, folia longiora, foliolis latioribus, magis nervosis, racemi densiores, flores longiores, carina obtusa.

✓ Cassillas, Depart. S. Rosa, Guat., alt. 4,000^{ft}, Oct. 1892, Heyde & Lux, no. 4,172.—S. Juan Utapa, Depart. S. Rosa, Guat., alt. 4,500^{ft}, Oct. 1894, Heyde & Lux, no. 6,099.

Desmodium Hondurense Micheli; lignosum vix scandens dense velutino-tomentosum, stipulis linearibus, foliis trifoliolatis, stipellatis, floribus parvis in racemos densos, axillares congestis, legumine dense tomentoso, articulis sibi invicem replicatis.

Frutex ramulis gracilibus, tomentosus. Folia petiolata, pinnatim trifoliolata. Stipulæ lineares, acutæ, tomentosæ.

Petiolus communis dense tomentosus, 4^{lin} longus. Foliola ovata vel anguste ovata, obtusa, terminale stipellatum, distans, 1½–2^{poll} longum, 5–6^{lin} latum, lateralia minora, senilia omnia crassiuscula, superne puberula, subtus dense crispo-tomentosa. Racemi axillares vel terminales, sub anthesi 4–5^{poll} longi, rachi fere a basi florifero. Flores breviter pedicellati, secus rachin ternati vel fasciculati, purpurascens, parvi, congesti; bracteæ parvæ, lineares, caducæ. Calyx fere bilabiatus, labio superiore tridentato, inferiore bidentato, dense tomentosus, vix lineam longus. Vexillum basi nudum, latum, fere orbiculare, breviter unguiculatum, 2½^{lin} longum, alæ carinæ leviter adhaerentes, 2^{lin} longæ, carina vix curvata, late obtusa vel truncata. Stamen vexillare e basi liberum. Ovarium 3–4-ovulatum. Legumen (junius) dense tomentosum, articulis 3–4, omnibus fertilibus, e calyce exsertis, sibi invicem replicatis.

Species verisimiliter e sectione Chalarium (nisi stamine vexillari libero); fructus structura ad *D. plectocarpum* Hemsley Diag. Pl. Nov. pars 3, p. 46 pertinet.

San Pedro Sula, Depart. S. Bárbara, Honduras, alt. 600–1,000^{ft}, Febr. 1887 and Apr. 1890, C. Thieme, nos. 5,197 & 5,207.

CALLIANDRA PORTORICENSIS Benth., var. **multijuga** Micheli.—Inflorescentia, floribus, legumine omnino *C. Portoricensis* Benth.; differt pinnis 7–8- nec 2–4-jugis.

Casillas, Depart. S. Rosa, Guat., alt. 4,000^{ft}, Jan. 1893, Heyde & Lux, no. 4,148. ✓ San Juan Utapa, Depart. S. Rosa, alt. 4,500^{ft}, Oct. 1893, Heyde & Lux, no. 6,098. ✓

Pithecolobium insigne Micheli; puberulum, foliolis bigeminis, amplis, floribus spicatis, magnis, spicis ad apicem ramorum racemosis.

Arbor vel frutex, in partibus junioribus puberulum, caeterum glabrescens, stipulæ ignotæ. Folia bipinnata, pinnis unijugis. Petiolus communis gracilis, 2–2½^{poll} longus, glandulis ad apicem et inter pinnas parvis, vix elevatis rachis 1½^{poll} longus. Foliola unijuga, ampla, 5^{poll} longa, 1½–2^{poll} lata, glabra, penninervia, subcoriacea, oblique ovata, ad apicem sensim attenuata, longiuscule acuminata, acuta. Pedunculi ad apicem ramorum longe laxèque racemosi; spicæ 5–7^{poll} longæ, supra medium floriferæ, rachi velutine puberulo. Flores sessiles, secus rachin haud congesti, bracteis minutis fulti. Calyx dense velutino-puberulus, fere 2^{lin} longus, 5–7-

dentatus. Corolla velutina, 3^{lin} longa, 5-7-fida. Stamina indefinita, filamentorum tubo corollam paullo excedente. Antheræ parvæ, eglandulosæ. Pollen in massas coalitum. Ovarium sessile, puberulum. Legumen ignotum.

Species magnitudine florum et foliorum insignis; fructu absente determinatio incerta. Notis plurimis tamen ad genus Pithecolobium rite pertinere videtur. A sectione Caulanthon imprimis affini differt petiolis glandulosis et pedunculis racemosis.

✓ San Pedro Sula, Depart. S. Bárbara, Honduras, alt. 600^{ft}, Apr. 1890, C. Thieme, no. 5,208.

CENTRADENIA FLORIBUNDA Planch., var. **grandifolia** Cogn.—Planta robustior. Folia magna, glabrata, majora 6-11^{cm} longa et 1.5-3^{cm} lata.

✓ Palin, Depart. Amatitlan, Guat., alt. 3,560^{ft}, Febr. 1892, J. D. S., no. 2,645.—Rio Samalá, Depart. Retalhuleu, Guat., alt. 1,700^{ft}, Apr. 1892, J. D. S., no. 2,651.

Arthrostemma hirtella Cogn.; caule herbaceo; ramis junioribus petiolis pedunculis calycibus foliisque subtus setulis brevissimis adpressis sparse hirtellis; foliis parvis, breviter petiolatis, elliptico-ovatis, obtusis, basi obtusiusculis, margine integerrimis vel obscure crenulatis, sparse adpresseque setoso-ciliatis, trinerviis; floribus solitariis, axillaribus vel ad ramulum brevissimum terminalibus; calycis tubo campanulato, segmentis anguste triangularibus, vix ciliatis, tubo subaequilongis; staminibus valde inaequalibus, majorum connectivo basi profunde bifido, minorum connectivo ultra insertionem filamentum vix porrecto basi integro; ovario superne breviter denseque setoso.

Rami satis graciles, acutiuscule tetragoni. Petiolus gracillimus, 2-4^{mm} longus. Folia rigidiuscula, supra intense viridia, subtus pallidiora, 12-22^{mm} longa, 8-15^{mm} lata. Pedicelli graciles, 1-1.5^{cm} longi. Calycis tubus 6^{mm} longus, apice 4^{mm} latus; segmenta subreflexa, 5^{mm} longa, basi 3^{mm} lata. Petala purpurea, anguste obovata, brevissime glanduloso-ciliata, 12^{mm} longa. Capsula obovoidea, 7-8^{mm} longa.

✓ San Miguel Uspantán, Depart. Quiché, Guat., alt. 6,000^{ft}, Mch. 1892, Heyde & Lux, no. 3,328.

Conostegia viridis Cogn.; ramis junioribus petiolis pedunculis calycibusque densiuscule furfuraceo-puberulis; foliis membranaceis, ovatis, breviuscule acuminatis, basi rotundatis vel submarginatis, acute minuteque duplicato-dentatis ciliatis-

que, 5-plinerviis fere 5-nerviis, supra tenuissime punctato-furfuraceis et breviter sparseque setosis, subtus ad nervos nervulosque leviter stellato-furfuraceis caeteris glabratis; floribus 5-meris, subsessilibus; alabastris anguste obovoideis, obtusiuscule acuminatis.

Rami robustiusculi, obscure tetragoni. Petiolus 2.5–3.5^{cm} longus. Folia supra intense viridia, subtus laete viridia, 10–13^{cm} longa, 6–7^{cm} lata, nervis nervulisque subtus satis prominentibus. Paniculae corymbiformes, multiflorae fere 1^{dm} longae. Alabastra cinerea, 6–7^{mm} longa, 4^{mm} crassa. Petala oblique obovata, 5^{mm} longa. Antherae oblongae, subrectae, fere 2^{mm} longae. Stylus crassus, 5^{mm} longus, stigmatate non dilatato. Fructus nigricans, depresso subglobosus, 5–6^{mm} crassus.—Species *C. subcrustulatae* Triana (Cogn. in DC. Monogr. Phan. 7: 709) proxima, sed foliis 5-plinerviis, etc.

✓San Felipe, Depart. Retalhuleu, Guat., alt. 2,050^{ft}, Apr. 1892, J. D. S., no. 2,650.

Var. **angustifolia** Cogn.—Petiolus 5^{cm} longus. Folia oblonga, distincte 5-plinervia, basi acuta vel subacuta 17^{cm} longa, 6–6.5^{cm} lata.

✓Primavera, Depart. Sololá, Guat., alt. 760^{ft}, July 1891, Shannon, no. 487.

Miconia Donnell-Smithii Cogn. (§ AMBLYARRHENA); glaberrima; ramis teretiusculis; foliis satis parvis, breviter petiolatis, pergamentaceis, lanceolatis, longiuscule angusteque acuminatis, basi cuneatis, integerrimis, leviter triplinerviis; floribus 5-meris, longiuscule pedicellatis; calycis tubo suburceolato, dentibus anguste triangularibus, tubo triplo brevioribus; stylo apice truncato.

Rami gracillimi, leviter ramulosi. Petiolus gracilis, circiter 1^{cm} longus. Folia 5–7^{cm} longa, 1.5–2^{cm} lata, nervis supra impressis, subtus valde prominentibus, nervulis paulo distinctis. Paniculae pyramidatae, laxae, submultiflorae, 6–9^{cm} longae; pedicelli 4–7^{mm} longi, sub apice articulati. Calycis tubus 3^{mm} longus, apice leviter constrictus; dentes erecti, vix 1^{mm} longi. Petala subrotundata, 1.5^{mm} longa. Antherae rectae, 1.5^{mm} longae. Stylus crassiusculus, rectus, 4–5^{mm} longus.—Species *M. pergamentaceae* Cogn. (DC. Monogr. Phan. 7: 873) proxima.

✓San Miguel Uspantán, Depart. Quiché, Guat., alt. 6,000^{ft}, Apr. 1892, Heyde & Lux, no. 3,333.

Miconia alpestris Cogn. (§ CREMANIUM); ramis superne obtuse tetragonis et leviter compressis, junioribus petiolis pedunculis calycibusque dense stellato-furfuraceis; foliis majusculis, longiuscule petiolatis, obovato-lanceolatis, longiuscule subabrupteque acuminatis, basi late cuneatis, integerrimis, triplinerviis fere trinerviis, supra primum furfuraceis demum glabris, subtus ad nervos densiuscule stellato-furfuraceis cæteris glabratis; floribus 5-meris, brevissime pedicellatis calyce subhemisphærico, dentibus brevibus, obtusiusculis, carnosulis; antheris biporosis; stylo brevi, apice truncato.

Rami robustiusculi, apice fuscescentes. Petiolus satis gracilis, fuscescens, 2–5^{cm} longus. Folia erecto-patula, rigidiuscula, supra intense viridia, subtus satis pallidiora, 12–17^{cm} longa, 4–7^{cm} lata, nervis subtus satis prominentibus. Paniculæ late pyramidatæ, multifloræ, 5–8^{cm} longæ; pedicelli sæpius vix 1^{mm} longi. Calycis tubus fuscescens, 2^{mm} longus, 2.5^{mm} latus; dentes erecti, 0.5^{mm} longi. Petala obovata, apice leviter emarginata, 2^{mm} longa. Antheræ 1^{mm} longæ. Stylus rectus, 2^{mm} longus.—Species *M. carneæ* Cogn. (DC. Monogr. Phan. 7: 912) proxima. ✓ San Miguel Uspantán, Depart. Quiché, Guat., alt. 7,500^{ft}, Apr. 1892, Heyde & Lux, no. 3,334.

Clidemia radicans Cogn. (§ CALOPHYSOIDES); caule brevi, repente, radicante; ramis junioribus petiolis pedunculisque brevissime denseque stellato-puberulis; foliis valde inæqualibus et dissimilibus, integerrimis, trinerviis, supra primum puberulis demum glabris, subtus ad nervos nervulosque densiuscule stellato-furfuraceis cæteris glabratis majoribus brevissime petiolatis satis obliquis oblongis acutis basi leviter inæqualibus subrotundatis, minoribus sessilibus ovatis vel suborbicularibus; racemis axillaribus vel interdum terminalibus, breviusculis, paucifloris; floribus 5-meris, breviter pedicellatis; calyce urceolato, leviter furfuraceo, brevissime 5-dentato.

Rami graciles, breviusculi, leviter flexuosi, teretiusculi, cinerei, paulo ramulosi. Petiolus satis gracilis, 2–5^{mm} longus. Folia membranacea, supra saturate viridia, subtus viridi-cinerea; majora erecta vel erecto-patula, 10–17^{cm} longa, 3–5.5^{cm} lata; minora patula, 1.5–4^{cm} longa, 14–20^{mm} lata. Racemi erecti, 4–6^{cm} longi; pedicelli 2–3^{cm} longi. Calyx cinereo-fuscus, ultra medium satis constrictus, 2.5^{mm} longus, inferne 2^{mm} latus. Petala patula, suborbicularia, 1.5^{mm} lata. Antheræ lineares, leviter arcuatæ, 1.5^{mm} longæ. Stylus rectus, 3^{mm}

longus, stigmatē punctiformi. Bacca depresso-sphærica, distincte 10-costata, intense cyanea, 4-5^{mm} crassa.

✓ Jiménez, Llanos de S. Clara, Comarca de Limón, Costa Rica, alt. 650^{ft}, Apr. 1894, J. D. S., no. 4,789.—Collected also by M. Pittier in the valley of Rio Reventazon, Costa Rica, 1893 (no. 8,123).

Clidemia glandulifera Cogn. (§ SAGRÆA); ramis junioribus pedunculis calycibusque brevissime denseque stellato-tomentosis et pilis patulis brevibus glandulosis densiuscule vestitis; foliis longiuscule petiolatis, satis disparibus, anguste ovatis, acutis vel breviter acuminatis, basi rotundatis, integerrimis, supra pilis simplicibus brevissimis dense hirtellis, subtus brevissime denseque stellato-pilosis, majoribus 7-nerviis, minoribus 5-nerviis; paniculis longiusculis, pyramidatis, multifloris; floribus 4-meris, subsessilibus; calyce campanulato, brevissime dentato.

Rami satis graciles, juniores teretiusculi, sordide fusci. Petiolus brevissime denseque stellato-tomentosus et sparsissime breviterque glandulosa-pilosus, 3-7^{cm} longus. Folia submembranacea, supra intense viridia, subtus cinerea, 12-15^{cm} longa et 7-8^{cm} lata, minora subdimidio breviora et angustiora. Paniculæ patulæ, 7-10^{cm} longæ. Calyx cinereo-fuscus, 3^{mm} longus. Petala obovata, 3^{cm} longa. Antheræ lineares, subrectæ, 2.5-3^{mm} longæ. Stylus capillaris, 5-7^{mm} longus, stigmatē punctiformi. Bacca nigricans, subglobosa, 4-5^{mm} crassa.

✓ San Miguel Uspantán, Depart. Quiché, Guat., alt. 6,000^{ft}, Apr. 1892, Heyde & Lux, no. 3,329.

Pittiera trilobata Cogn.; ramis junioribus petiolis cirrhisque breviter sparseque pilosulis; foliis breviuscule petiolatis, rigidiusculis, late ovatis, leviter vel usque ultra medium trilobatis, basi profundiuscule emarginatis, supra scabris, subtus ad nervos densiuscule breviterque asperis caeteris brevissime denseque pubescenti-scabriusculis; calyce brevissime denseque puberulo, tubo breviter campanulato-subcylindrico, segmentis triangulari-lanceolatis, tubo satis longioribus; corollæ segmentis obovato-oblongis, acutis vel breviter acuminatis; staminum filamentis basi pilosulis.

Rami graciles, elongati, paulo ramulosi, leviter sulcati. Petiolus satis gracilis, profunde striatus, 2-5^{cm} longus. Folia supra intense viridia, subtus viridi-cinerea, margine remotiuscule spinuloso-denticulata, 7-10^{cm} longa, 6-9^{cm} lata; nervi

subtus paulo prominentes, duo laterales trifurcati imum sinum leviter marginantes. Cirrhi robusti, elongati, sulcati, saepius 5-fidi. Pedunculus masculus satis gracilis, brevissime et densiuscule puberulus, 7–26^{cm} longus. Calycis tubus 10–13^{mm} longus, superne circiter 1^{cm} latus; segmenta erecto-patula, 15–18^{mm} longa, basi 5^{mm} lata. Corolla membranacea, utrinque leviter furfuraceo-puberula, 2.5^{cm} longa. Stamina filamenta filiformia, 11–12^{mm} longa; capitulum antherarum ovoideo-conicum, 1^{cm} longum, 6^{mm} crassum. Fructus oblongus, laevis, 8^{cm} longus, 3^{cm} crassus. Semina ovata, apice obtusa, basi obscure tridentata, margine subalata, 1^{cm} longa, 7^{mm} lata, 1.5^{mm} crassa.

✓ Buena Vista, Depart. S. Rosa, Guat., alt. 5,500^{ft}, Dec. 1892, Heyde & Lux, no. 4, 189.

Schizocarpum Guatemalense Cogn.; foliis longiuscule petiolatis, ambitu ovatis, leviter vel usque ad medium trilobatis, supra glabratis, subtus brevissime et densiuscule puberulis, basi leviter emarginatis; nervis lateralibus imum sinum non vel vix marginantibus; calycis tubo brevissimo, late campanulato, segmentis triangulari-linearibus, tubo multo longioribus; corollæ segmentis longe acuminatis; fructu anguste ovoideo, apice longiuscule rostrato.

Rami gracillimi, elongati, sulcati, glabrati vel leviter puberuli. Petiolus gracilis, striatus, brevissime et densiuscule hirtellus, 2–4^{cm} longus. Folia tenuiter membranacea, intense viridia, margine vix denticulata, 6–10^{cm} longa, 4–7^{cm} lata; lobus terminalis triangularis vel oblongus, acutus, laterales multo breviores, obtusi. Cirrhi filiformes, inaequaliter bifidi, sulcati, glabrati. Pedunculus masculus gracilis, densiuscule et brevissime puberulus, 3–4^{cm} longus. Calyx furfuraceus et longiuscule sparseque pilosus, tubo 3^{mm} longo, 4–5^{mm} lato, segmentis erecto-patulis, 8–12^{mm} longis, basi 2^{mm} latis. Corolla pallide flava, anguste campanulata, vix furfuraceo-puberula, fere 3^{cm} longa. Stamina filamenta 6–7^{mm} longa; capitulum antherarum 6^{mm} longum. Pedunculus fructiferus robustiusculus, 7–8^{mm} longus. Fructus sparse pilosus, (maturus?) 3.5^{cm} longus, 17^{mm} crassus.

✓ Carrizal, Depart. S. Rosa, Guat., alt. 5,000^{ft}, Nov. 1892, Heyde & Lux, no. 4, 186.

Cyclanthera Donnell-Smithii Cogn. (§ EUCYCLANTHERA); ramis glaberrimis; foliis breviter petiolatis, trifoliolatis; foliolis breviter petiolulatis, undulato-denticulatis, glabratis, supra

sparse punctato-scabriusculis, mediano oblongo-lanceolato, acutissime breviterque acuminato, lateralibus valde asymmetricis, ovato-oblongis, acutis; cirrhis bifidis; racemis masculis petiolo brevioribus, paucifloris; floribus minutis.

Rami graciles, elongati, angulato-sulcati. Petiolus gracilis, striatus, glaber, 2–3^{cm} longus; petioluli leviter puberuli, 3–5^{mm} longi. Foliola tenuiter membranacea, intense viridia; terminale 6–7.5^{cm} longum, 2–2.5^{cm} latum, basi acutum; lateralia 3.5–5^{cm} longa, 1.5–2.5^{cm} lata, basi extrinsecus auriculata. Cirrhi graciles, longissimi, sulcati, glabri. Pedunculus communis masculus filiformis, sulcatus, leviter puberulus, 0.5–1.5^{cm} longus; pedicelli capillares, patuli, 2–3^{mm} longi. Flores ut videtur vix 2^{mm} lati. Calycis dentes subnulli.—Species *C. gracillimæ* Cogn. (DC. Monogr. Phan. 3: 834) proxima.

San Miguel Uspantán, Depart. Quiché, Guat., alt. 6,000^{ft}, Apr. 1892, Heyde & Lux, no. 3,345.

Burmeistera cyclostigmata Donnell Smith. — Suffrutex orgyalis ramosus. Folia longe petiolata lanceolato-elliptica, termino utroque praecipue superno acuminato, margine glanduloso-punctulo, costis lateralibus utrimque 10–12 supra impressis subtus prominulis, venulis pellucidis. Pedunculi folia superantes. Calycis tubus longiuscule campaniformis lobis oblongis sublongior. Corollæ tubus dorso breviter fissus, lobi valde inaequales recurvi secundi. Antheræ omnes prorsus nudæ. Stigmatis magni lobi suborbiculares.

Leaves $3\frac{1}{2}$ –5 × $1\frac{1}{2}$ – $1\frac{3}{4}$ ⁱⁿ, paler beneath, lateral nerves forming intramarginal arches, base often unequal, petioles 1– $1\frac{1}{2}$ ⁱⁿ long. Peduncles 3– $4\frac{1}{2}$ ⁱⁿ long. Tube of calyx 5 × $2\frac{1}{2}$ ⁱⁿ, sometimes narrowing at base, lobes 3–4ⁱⁿ long and obtuse. Tube of corolla 6ⁱⁿ long, narrowed above; limb unequally partite, oblique, inflated on lower side; 2 superior segments 11–13ⁱⁿ long, twice exceeding the 3 inferior; all linear, acute, arcuately deflexed to lower side. Staminal tube adnate to base of corolla, pubescent, $1\frac{1}{2}$ ⁱⁿ long; anthers lightly recurving, the 3 superior 4ⁱⁿ long and twice exceeding the others. Placentas peltate, oval, entire. Lobes of stigma 2– $2\frac{1}{2}$ ⁱⁿ in diam., barbate beneath.—Nearest to *B. virescens* Benth. et Hook.

Estrella, Prov. Cartago, Costa Rica, alt. 4,400^{ft}, Apr. 1888, Juan J. Cooper, no. 5,845.

Psammisia symphystemona Donnell Smith.—Tota glabra. Rami teretes. Folia subdisticha coriacea elliptica longe caudato-acuminata basi obtusa 3–5-plinervia minutim

reticulata, venis intramarginalibus transversis crebris. Racemi sessiles, rhachi brevissima, pedicellis confertis gracilibus basi bracteatis supra basin bibracteolatis. Stamina aequalia tertiam partem corollæ attingentia, filamentis in tubum connatis, antheris prope basin affixis; omnibus ad apicem connectivi 2-calcaratis.

Epiphytal, 8–10^{ft} long (Cooper). Branches pale, internodes 9–15^l long. Leaves 5–7 × 2–3ⁱⁿ, more narrowing above the middle than below, caudate prolongation 9–12^l long, interior 2 lateral nerves arising 3–4^l above base and like midrib very prominent beneath, the exterior 2 basal and obscure. Petioles 2^l long. Rhachis 2–5^l long; pedicels articulated at base, 5–8^l long; bracts ovate; bracteoles lanceolate, glandular-denticulate, like bracts very minute and colored. Tube of calyx campanulate, 2^l high; limb as long, spreading; lobes round, mucronate-acuminate, 1^l long. Corolla red, sprinkled toward apex with red glands, cylindrical-tubular, 13–15^l long, tapering above stamens, lobes triangular-oblong, 2 × 1^l. Filaments persistently connate, 2^l long; anther-cells 2^l long, twice exceeding their tubes. Style exsert.

✓ Mariposa, Prov. Alajuela, Costa Rica, alt. 5,500^{ft}, May 1887, Anastasio Alfaro, no. 5,842.

GAULTHERIA ODORATA HBK., var. **Costaricensis** Donnell Smith.—Folia orbiculari-ovata subintegra, costis lateralibus utrimque 3–4 subtus prominentibus usque ad apicem fere adscendentibus. Bracteolæ semipollicares.

Estrella, Prov. Cartago, Costa Rica, alt. 4,400^{ft}, Mch. 1888, Juan J. Cooper, no. 5,841.

Calceolaria Irazuensis Donnell Smith. (§CHEILONCOS Wettst.)—Herbacea adsurgens ferrugineo-glanduloso-pubescent. Folia ovato-lanceolata basi cuneata, uniuscujusque jugi alterum aliquantum minus, grosse dentata supra puberula subtus pallida et praeter nervos glabra petiolata. Pedunculi terminales 2 longissimi foliis ternatis bracteati, cymis corymbiformibus nutantibus, pedicellis filiformibus, floribus intermaximas. Corollæ labium superius semi-globosum calycem subaequans ab inferiori obovato breviter aperto 3-plo superatum. Antherarum loculi confluentes.

Stem stout, sparingly branched, 3–4^{ft} long. Leaves 2½–4 × 1–1½ⁱⁿ, petioles 3–6^l long. Peduncles 3–4ⁱⁿ long; bractlets 2, foliaceous, unequal, ¾–1¼ⁱⁿ, subtending viscid-pubescent corymbs 1¾–2½ⁱⁿ high and 7–12-flowered. Calyx-segments

nearly free, ovate-acuminate, 3×2^1 , 5-nerved, tipped with a gland. Corolla obovate, $10-12 \times 5-6^1$, yellow, pluri-nerved, sprinkled with minute dusky glandular hairs, barbate at insertion of stamens. Anthers stout, arcuate; cells $\frac{3}{4}^1$ long, divaricate from apex of shorter filament. Stigma incrassate. Capsule glandular-punctate.

✓Moist, shaded slopes of Volcán Irazú, Prov. Cartago, Costa Rica, alt. 9,000^{ft}, Mch. 1894, J. D. S., no. 4,904.

Spathacanthus Donnell-Smithii Lindau.—This determination of no. 1,030 must be substituted for the erroneous one, *Macfadyena simplicifolia* Botan. Gaz. **16**: 198, the specific name being dropped as inappropriate for an *Acanthacea*.

Pisonia macranthocarpa Donnell Smith. (*P. aculeata* L., var. *macranthocarpa* Donnell Smith in Botan. Gaz. **16**: 198).—Arbusculus inermis. Folia obovata vel oblongo-elliptica apice rotundata vel plus minus obtuse acuminata in petiolum cum costa et cymis pubescentem attenuata ceterum glabra. Cymæ corymboso-fasciculatæ, pedicellis longiusculis (fructiferis valde elongatis), perigonio tubuloso-infundibuliformi, floribus hermaphroditis. Anthocarpia magna oblongo-obovata ad costas glandulis pluriserialibus longe stipitatis muricata.

Erect, 12–18^{ft} high, branchlets occasionally spine-like. Leaves opposite, often fasciculate in axils, $1\frac{1}{2}-2\frac{1}{2} \times \frac{3}{4}-1\frac{1}{2}^{\text{in}}$, the younger sprinkled beneath with cystoliths; petioles 3–5^l long, marginate, at length glabrous. Peduncles axillary and terminal, 8–12^l long, in fruit elongated; corymbs subglobose (1ⁱⁿ); bracts orbicular-ovate (1^l); bractlets near apex of pedicel 3, oblong ($\frac{3}{4}^1$). Perigonium puberulous, $2\frac{1}{2}-3^1$ long, twice to thrice exceeding pedicel, lobes 5 and ovate ($\frac{1}{4}^1$). Stamens nearly free, 6–7, didynamous, exsert, anthers orbicular. Style included, stigma minutely laciniate. Cymes in fruit 5–6ⁱⁿ in diam., pedicels $1\frac{1}{2}-2^{\text{in}}$ long; anthocarps $9 \times 4\frac{1}{2}^1$, flavo-tomentulose, stipes of glands lageniform ($\frac{1}{4}^1$).

Escuintla, Depart. Escuintla, Guat., alt. 1,100^{ft}, Apr. 1890 and Feb. 1892, J. D. S., nos. 2,091 and 1,230.—Los Verdes, Depart. Amatitlan, Guat., alt. 3,500^{ft}, Oct. 1893, Heyde & Lux, no. 6,301.

TRIPLARIS MACOMBII Donnell Smith in Botan. Gaz. **19**: 237, var. **rufescens** Donnell Smith.—Folia utrimque praecipue subtus ad nervos pilosiuscula. Calycis rufescentis lobi interiores plerumque plus minus exserti, interdum lineares exteriorum dimidium paene aequantes.

Tree 30–50^{ft} high; flowers brick-red.

✓Mazatenango, Depart. Suchitepéquez, Guat., alt. 1,200^{ft}, Jan. 1894, Heyde & Lux, no. 6,375.

Pseudolmedia oxyphyllaria Donnell Smith.—Primo sericea, cito aetate proveciore glabrata. Folia semipedalia et ultra ter quaterve longiora quam latiora oblongo-lanceolata in acumen longiusculum obtusum angustata ad basin acuta subinaequilatera falcata, costis subtus prominentibus in utroque latere circa 20. Capitula mascula singula vel 2–5-glomerata; involucri bracteae externae deltoideae, internae ovatae, cunctae autem acutae; receptaculi concavi magni bracteolae rhomboideo-vel lanceolato-spatulatae. Stamina numerosissima, antheris nudis ad basin breviter auriculatis.

Tree 20–30^{ft} high. Branchlets terete. Leaves 6–8 × 1½–2¼ⁱⁿ, glabrous; petioles pubescent, 3^l long. Heads about 5^l in diam.; bracts cano-sericeous with scarious margins, the interior 3^l long; bractlets cano-sericeous, lacerate, exceeding stamens. Anthers 1^l long. Female heads not seen.

Slopes of Volcán Tecuamburro, Depart. S. Rosa, Guat., alt. 6,000^{ft}, Febr. 1893, Heyde & Lux, no. 4,429.

Pilea Costaricensis Donnell Smith.—Dioica glabra. Folia in eodem jugo maxime inaequimagna admodum autem conformia, alterum nempe majus oblongo-ellipticum longiuscule cuspidato-acuminatum basi aliquantulum inaequilaterum et plerumque obtusum longe petiolatum, alterum quadruplo minus breviusque petiolatum oblongo-lanceolatum a medio utrimque sensim angustatum, ambo 3-nervia subtus pallida et evenia supra basin integram incurvo-crenulata, nervis lateralibus apicem fere attingentibus. Cymae brevissime pedunculatae, masculae a petiolo folii majoris feminae a petiolo folii minoris superatae.

Herbaceous, ascending 1–2^{ft} from a rooting base, branching. Leaves, especially beneath, occupied by linear cystoliths; the larger in the pair 3½–5½ × 1½–1¾ⁱⁿ, more narrowing above the middle than below, cuspidate tip 4–6^l long, petioles 1–2ⁱⁿ long. Masculine cymes 6–8^l high, perianth 2^l in diam. with oblong segments exceeded by anthers; feminine cymes less evolute, exterior segments of perianth scarious-tipped and twice exceeded by obliquely oval ($\frac{3}{4}$ ^l) achenium.

✓Estrella, Prov. Cartago, Costa Rica, alt. 4,400^{ft}, Apr. 1888, Juan J. Cooper, no. 5,952.

Dioscorea calyculata Donnell Smith. (§ EPISTEMON Griseb. in Fl. Brasil.)—Omnibus in partibus glaber. Folia tenuiter membranacea inter minora subcordata vel subcordato-ovata acutissime acuminata et mucrunculata, basi ima cuneata cum nervis basalibus 3–5 in petiolum marginatum decurrente. Racemi filiformes elongati, pedunculis furcatis, pedicellis solitariis basi bracteolatis subflore bibracteolatis. Perianthii masculini minimi infundibulari-rotati segmenta exteriora orbicularia, interiora oblongo-obovata.

Herbaceous, twining. Leaves alternate, $1\frac{3}{4}$ – $2\frac{1}{2}$ × $1\frac{1}{4}$ – 2 ⁱⁿ, the younger ovate-lanceolate with a filiform mucro, petioles 6–14^l long. Racemes 6–10ⁱⁿ long, axillary or composing an elongated terminal panicle; peduncles 2–3-furcate, 2–3ⁱⁿ long; pedicels 1^l long; basal bracteole filiform, exceeding pedicel; apical bracteoles opposite, ovate ($\frac{1}{3}$ ^l), persistent. Tube of male perianth very short, segments $\frac{2}{3}$ ^l long; stamens 6, all perfect, inserted at base of segments; filaments flat, attenuate upwards, incurved at apex, exceeding perianth; anthers many times shorter than filament, oblong, arcuate, affixed at middle. Rudimentary ovary globose, exceeding tube of perianth, styles united and at apex 3-lobed. Pistillate flowers and fruit not seen.

✓ Alajuela, Prov. Alajuela, Costa Rica, alt. 2,700^{ft}, Nov. 1887, Anastasio Alfaro, no. 5,959.—Guachipilin, Depart. S. Rosa, Guat., alt. 2,500^{ft}, Nov. 1893, Heyde & Lux, no. 6,260.

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